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Abstract for 30 minute presentation (20 minutes plus 10 minutes for questions)

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Title: Replacement of HCFC-225 Solvent for Cleaning NASA Propulsion Oxygen Systems

Abstract:

Since the 1990's, when the Class I Ozone Depleting Substance (ODS) chlorofluorocarbon-113 (CFC-113) was banned, NASA's propulsion test facilities at Marshall Space Flight Center (MSFC) and Stennis Space Center (SSC) have relied upon hydrochlorofluorocarbon-225 (HCFC-225) to safely clean and verify the cleanliness of large scale propulsion oxygen systems. Effective January 1, 2015, the production, import, export, and new use of HCFC-225, a Class II ODS, was prohibited by the Clean Air Act. In 2012 through 2014, leveraging resources from both NASA and the Defense Logistics Agency - Aviation Hazardous Minimization and Green Products Branch, test labs at MSFC, SSC, and Johnson Space Center's White Sands Test Facility (WSTF) collaborated to seek out, test, and qualify a replacement for HCFC-225 that is both an effective cleaner and safe for use with oxygen systems. This presentation summarizes the tests performed, results, and lessons learned. It also demonstrates the benefits of cross-agency collaboration in a time of limited resources.